

Appendix

VMS Message Terms and Phrases Definitions, and Usage Conventions

APPENDIX

VMS Message Terms and Phrases, Definitions, and Usage Conventions

A listing of appropriate terminology and phrase usage conventions were developed by the designers of the TransGuide ITS for use in compiling VMS messages in the development of draft incident response configurations. The key phrases used to develop the appropriate VMS messages and a brief description of their meaning and usage within the ITS context are listed on the following pages.

EXPLANATION OF VMS TERMS AND PHRASES

KEY PHRASE	EXPLANATION
MAJOR ACCIDENT	A closure expected to last OVER 15 minutes
MINOR ACCIDENT	A closure expected to last 15 minutes OR LESS
CONSTRUCTION AHEAD	Self-explanatory
CONGESTION AHEAD	Self-explanatory
DEBRIS ON ROAD	Self-explanatory
WATER ON ROAD	Self-explanatory
LEFT LANE CLOSED LEFT LN CLOSED	The LEFTMOST lane of any freeway (Always LANE 1) The LEFTMOST lane of any freeway (Always LANE 1)
CENTER LANE CLOSED	a) LANE 2 of a 3 lane freeway b) LANE 2 of a 4 lane freeway c) LANE 3 of a 4 lane freeway d) LANE 3 of a 5 lane freeway e) LANE 3 of a 6 lane freeway f) LANE 4 of a 6 lane freeway
RIGHT LANE CLOSED RIGHT LN CLOSED	The RIGHTMOST lane of any freeway The RIGHTMOST lane of any freeway
1 LANE CLOSED	a) LANE 2 of a 5 lane freeway b) LANE 4 of a 5 lane freeway c) LANE 2 of a 6 lane freeway d) LANE 5 of a 6 lane freeway
2 LEFT LNS CLOSED	The 2 LEFTMOST lanes of any freeway 3 lanes wide or wider
2 CNTR LNS CLOSED	a) LANES 2 + 3 of a 4 lane freeway b) LANES 2 + 3 of a 5 lane freeway c) LANES 3 + 4 of a 5 lane freeway d) LANES 3+4 of a 6 lane freeway
2 RIGHT LNS CLOSED	The 2 RIGHTMOST lanes of any freeway 3 lanes wide or wide
2 LANES CLOSED	Any other combination of 2 lanes
3 LEFT LNS CLOSED	The 3 LEFTMOST lanes of any freeway 4 lanes wide or wider
3 CNTR LNS CLOSED	a) LANFS 2+3+4 of a 5 lane freeway b) LANES 2+3+4 of a 6 lane freeway c) LANES 3+4+5 of a 6 lane freeway

EXPLANATION OF VMS TERMS AND PHRASES (Cont'd)

KEY PHRASE	EXPLANATION
3 RIGHT LNS CLOSED	The 3 RIGHTMOST lanes of any freeway 4 lanes wide or wider
3 LANES CLOSED	Any other combination of 3 lanes
4 LEFT LNS CLOSED	The 4 LEFTMOST lanes of any freeway 5 lanes wide or wider
4 CNTR LNS CLOSED	LANES 2+3+4+5 of a 6 lane freeway
4 RIGHT LNS CLOSED	The 4 RIGHTMOST lanes of any freeway 5 lanes wide or wider
4 LANES CLOSED	Any other combination of 4 lanes
5 LEFT LNS CLOSED	The 5 LEFTMOST lanes of any freeway 6 lanes wide or wider
5 RIGHT LNS CLOSED	The 5 RIGHTMOST lanes of any freeway 6 lanes wide or wider
5 LANES CLOSED	Any other combination of 5 lanes
FREEWAY CLOSED FRWY CLOSED	Self-explanatory Self-explanatory
ON LEFT SHOULDER ON LEFT SHLDR	Self-explanatory Self-explanatory
ON RIGHT SHOULDER ON RIGHT SHLDR	Self-explanatory Self-explanatory
ON BOTH SHOULDERS ON BOTH SHLDRS	Self-explanatory Self-explanatory
LOWER LEVEL CLOSED	LOWER LEVEL of a 2 level section of freeway
UPPER LEVEL CLOSED	UPPER LEVEL of a 2 level section of freeway
ON LOWER LEVEL ON LOWER LVL	An incident has occurred on LOWER LEVEL but has not completely closed it (see previous)
ON UPPER LEVEL ON UPPER LVL	An incident has occurred on UPPER LEVEL but has not completely closed it (see previous)
EXIT (#) CLOSED	An EXIT RAMP to a frontage road or a street or highway is completely closed (exit number is given)
ON EXIT (#)	An incident has occurred on 1 lane of a 2 lane EXIT RAMP but has not completely closed the EXIT RAMP (exit number is given)
EXIT TO I-35 CLOSED X MILES	An incident has closed an EXIT to a connector ramp to another freeway
ON EXIT TO I-35	An incident has occurred on 1 lane of a 2 lane EXIT to a connector ramp to another freeway but has not completely closed the EXIT
RAMP TO I-35 NORTH CLOSED	An incident has closed a freeway to freeway CONNECTOR RAMP
ON RAMP TO I-35 N	An incident has occurred on 1 or more lanes of a multi-lane freeway to freeway CONNECTOR RAMP but has not completely closed the CONNECTOR RAMP

EXPLANATION OF VMS TERMS AND PHRASES (Cont'd)

KEY PHRASE	EXPLANATION
ON I-10 WEST	An incident has occurred on another freeway that intersects the freeway on which the driver reads the message
I-10 WEST CLOSED	An intersecting freeway is closed
USE LEFT LANE	The LEFTMOST lane of any freeway (ALWAYS lane 1)
USE CENTER LANE	a) LANE 2 of a 3 lane freeway b) LANE 2 of a 4 lane freeway c) LANE 3 of a 4 lane freeway d) LANE 3 of a 5 lane freeway e) LANE 3 of a 6 lane freeway f) LANE 4 of a 6 lane freeway
USE CENTER LANE	a) LANES 2 + 3 of a 4 lane freeway b) LANES 2 + 3 of a 5 lane freeway c) LANES 3 + 4 of a 5 lane freeway d) LANES 3+4 of a 6 lane freeway e) LANES 2 + 3 + 4 of a 5 lane freeway f) LANES 2+3+4 of a 6 lane freeway g) LANES 3+4+5 of a 6 lane freeway h) LANES 2+3+4+5 of 6 lane freeway
USE RIGHT LANE	The RIGHTMOST lane of any freeway
USE 2 LEFT LANES	The 2 LEFTMOST lanes of any freeway 3 lanes wide or wider
USE 2 CENTER LANES	a) LANES 2 + 3 of a 4 lane freeway b) LANES 2+3 of a 5 lane freeway c) LANES 3+4 of a 5 lane freeway d) LANES 3 + 4 of a 6 lane freeway
USE 2 RIGHT LANES	The 2 RIGHTMOST lanes of any freeway 3 lanes wide or wider
USE 3 LEFT LANES	The 3 LEFTMOST lanes of any freeway 4 lanes wide or wider
USE 3 CENTER LANES	a) LANES 2 + 3 + 4 of a 5 lane freeway b) LANES 2 + 3 + 4 of a 6 lane freeway c) LANES 3 + 4 + 5 of a 6 lane freeway
USE 3 RIGHT LANES	The 3 RIGHTMOST lanes of any freeway 4 lanes wide or wider
USE 4 LEFT LANES	The 4 LEFTMOST lanes of any freeway 5 lanes wide or wider
USE 4 CENTER LANES	LANES 2 + 3 + 4 + 5 of a 6 lane freeway
USE 4 RIGHT LANES	The 4 RIGHTMOST lanes of any freeway 5 lanes wide or wider
USE 5 LEFT LANES	The 5 LEFTMOST lanes of any freeway 6 lanes wide or wider
USE 5 RIGHT LANES	The 5 RIGHTMOST lanes of any freeway 6 lanes wide or wider
USE OPEN LANE	Use lane that is not shown as closed by red X on lane control signal
USE OPEN LANES	Use lanes that are not shown as closed by red X on lane control signals

EXPLANATION OF VMS TERMS AND PHRASES (Cont'd)

KEY PHRASE	EXPLANATION
USE CAUTION	Self-explanatory
USE UPPER LEVEL	Self-explanatory
USE LOWER LEVEL	Self-explanatory
ALL TRAFFIC	Self-explanatory
AVOID DELAY	Generally used with the suggestion that traffic use the LOWER or UPPER level of a freeway when DEMAND exceeds CAPACITY on the other level
MERGE LEFT	Traffic should begin moving to the LEFT lane(s) of a freeway
MERGE RIGHT	Traffic should begin moving to the RIGHT lane(s) of a freeway
ALTERNATE ROUTE	A non-specified route the driver could use instead of the freeway being driven on. Generally given as an option when DEMAND exceeds CAPACITY and the driver is able to exit the freeway onto a city street, highway or other freeway before encountering the incident Also used with "USE" when an intersecting freeway is closed.
ACCESS ROAD	The frontage road alongside the freeway. The phrase "ACCESS ROAD" is used instead of "FRONTAGE ROAD" because of public's understanding of the phrase.
ENTERWITH CAUTION	Used on a TY-3 CMS on a frontage road at an entrance ramp when an incident has occurred on the main lanes of a freeway but the freeway is still open
DO NOT ENTER	Used on a TY-3 CMS on a frontage road at an entrance ramp when DEMAND exceeds CAPACITY on the main lanes of a freeway but the freeway or the freeway is closed
X MILES	The distance that the driver is from the incident when the driver is reading the message. Distance is rounded to nearest 1/2 mile. (1/2 MILE, 1 MILE, 1-1/2 MILES, 2 MILES 2-1/2 MILES, 3 MILES, etc.)
AHEAD	Incident is less than 1/2 mile from driver

NOTES:

- 1) The lane or lanes stated in the message are the lanes as they exist at the point of the CMS message. For example, if the message states that the right lane of a 3 lane freeway is closed 1 mile down the road, the message is based on the right lane at the point of the message. If the freeway is 4 lanes wide at the point of the incident due to an additional lane forming on the right from an entrance ramp, the right lane at the point of the message would be lane 3 at the point of the incident.
- 2) If a numerical description of the lanes closed is used, a numerical description of the lanes TO USE is not used.

Example:

Correct:

2 LEFT LNS CLOSED
MERGE RIGHT

Incorrect:

2 LEFT LNS CLOSED
USE 2 RIGHT LANES

USAGE OF VMS TERMS AND PHRASES

FREEWAY (TYPES 1 & 2) VMS PHRASES	
KEY PHRASE	USAGE
MAJOR ACCIDENT MINOR ACCIDENT CONSTRUCTION AHEAD CONGESTION AHEAD DEBRIS ON ROAD WATER ON ROAD	Type of Incident
LEFT LANE CLOSED CENTER LANE CLOSED RIGHT LANE CLOSED 1 LANE CLOSED 2 LEFT LNS CLOSED 2 CNTR LNS CLOSED 2 RIGHT LNS CLOSED 2 LANES CLOSED 3 LEFT LNS CLOSED 3 CNTR LNS CLOSED 3 RIGHT LNS CLOSED 3 LANES CLOSED 4 LEFT LNS CLOSED 4 CNTR LNS CLOSED 4 RIGHT LNS CLOSED 4 LANES CLOSED 5 LEFT LNS CLOSED 5 RIGHT LNS CLOSED 5 LANES CLOSED FREEWAY CLOSED ON LEFT SHOULDER ON RIGHT SHOULDER ON BOTH SHOULDER LOWER LEVEL CLOSED UPPER LEVEL CLOSEDOR ON LOWER LEVEL ONUPPERLEVEL EXIT CLOSED ON EXIT EXIT TO I-35 ON EXIT TO I-35 EXIT TO I-10 ON EXIT TO I-10 EXIT TO US281 ON EXIT TO US-281 EXIT TO US-90 ON EXIT TO US-90 EXIT TO I-37 ON EXIT TO I-37 RAMP TO I-35 NORTH RAMP TO I-35 SOUTH RAMP TO I-10 WEST RAMP TO I-10 EAST RAMP TO I-37 NORTH	Description of WHAT is closed OR The location of the incident

USAGE OF VMS TERMS AND PHASES (Cont'd)

FREEWAY (TYPES 1&2) VMS PHRASES (Cont'd)

KEY PHRASE	USAGE
RAMP TO I-37 SOUTH RAMP TO US-281 N RAMP TO US-90 WEST ON RAMP TO I-35 N ON RAMP TO I-35 S ON RAMP TO I-10 W ON RAMP TO I-10 E ON RAMP TO I-37 N ON RAMP TO I-37 S ON RAMP TO US-90 W ON I-10 WEST ON I-10 EAST ON I-35 NORTH ON I-35 SOUTH ON I-37 NORTH ON I-37 SOUTH ON US-90 WEST ON US-281 NORTH I-10 WEST I-10 EAST I-35 NORTH I-35 SOUTH I-37 NORTH I-37 SOUTH US-90 WEST US-281 NORTH	Description of WHAT is closed OR The location of the incident
USE RIGHT LANE OR ON FREEWAY ALTERNATE ROUTE OR ON FREEWAY USE 2 RIGHT LANES OR ON FREEWAY USE 2 LEFT LANES OR ON FREEWAY USE CENTER LANE OR ON FREEWAY USE 3 RIGHT LANES OR ON FREEWAY USE 3 LEFT LANES OR ON FREEWAY USE CENTER LANES OR ON FREEWAY USE 4 RIGHT LANES OR ON FREEWAY USE 4 LEFT LANES OR ON FREEWAY USE 5 LEFT LANES OR ON FREEWAY USE 5 RIGHT LANES OR ON FREEWAY USE OPEN LANES OR ON FREEWAY USE CAUTION OR ON FREEWAY USE UPPER LEVEL OR ON FREEWAY USE LOWER LEVEL OR ON FREEWAY ALL TRAFFIC USE UPPER LEVEL AVOID DELAY USE UPPER LEVEL ALL TRAFFIC USE UPPER LEVEL AVOID DELAY MERGE LEFT MERGE RIGHT	Action to be taken by driver

USAGE OF VMS TERMS AND PHRASES (Con'td)

ENTRANCE RAMP (TYPE 3) VMS PHRASES		
KEY PHRASE		
ACCIDENT	ON FREEWAY	Type of incident and location OR Location of complete closure
CONSTRUCTION	ON FREEWAY	
CONGESTION	ON FREEWAY	
DEBRIS	ON FREEWAY	
WATER	ON FREEWAY	
ACCIDENT	ON LOWER LVL	
CONSTRUCTION	ON LOWER LVL	
CONGESTION	ON LOWER	
DEBRIS ON	LEVEL	
WATER ON	LOWER LEVEL	
ACCIDENT ON	UPPER LEVEL	
CONSTRUCTION	ONUPPERLVL	
CONGESTION	ON UPPER LVL	
DEBRIS ON	UPPER LEVEL	
WATER ON	UPPER LEVEL	
UPPER LEVEL	FRWY CLOSED	
LOWER LEVEL	FRWY CLOSED	
FREEWAY	CLOSED	
ENTERWITH	CAUTION	Action to be taken by driver
DO NOT	ENTER	

Selected Examples of VMS Messages

1) ACCIDENTS ON FREEWAY
<p>Situation 1:</p> <ul style="list-style-type: none">- 2 Lane Freeway- LEFT LANE CLOSED- MAJOR ACCIDENT- DEMAND LESS THAN CAPACITY- Lane closed is less than 1/2 mile ahead- No exit between driver and closed lane <p>MAJOR ACCIDENT LEFT LANE CLOSED USE RIGHT LANE:</p>
<p>Situation 2:</p> <ul style="list-style-type: none">- 2 Lane Freeway- LEFT LANE CLOSED- MAJOR ACCIDENT- DEMAND GREATER THAN CAPACITY- Lane closed is less than 1/2 mile ahead- No exit between driver and closed lane <p>USE SAME SIGN AS Situation 1</p>

SELECTED EXAMPLES OF VMS MESSAGES (Cont'd)

1) ACCIDENTS ON FREEWAY Cont' d)

Situation 3:

- 2 Lane Freeway
- LEFT LANE CLOSED
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY
- Lane closed is less than 1/2 mile ahead
- There IS an exit between driver and closed lane

MAJOR ACCIDENT
USE RIGHT LANE

Situation 4:

- 2 Lane Freeway
- LEFT LANE CLOSED
- MAJOR ACCIDENT
- DEMAND GREATER THAN CAPACITY
- Lane closed is less than 1/2 mile ahead
- There IS an exit between driver and closed lane

MAJOR ACCIDENT		USE RIGHT LANE	*OR
	+	OR	ACCESS
USE RIGHT LANE		ALTERNATE! ROUTE*	ROAD
1st flash		2nd flash	

Situation 5:

- 2 Lane Freeway
- LEFT LANE CLOSED
- MAJOR ACCIDENT
- DEMAND **LESS THAN** CAPACITY
- Lane closed is **1 mile** ahead
- No exit between driver and closed lane

MAJOR ACCIDENT		LEFT LANE CLOSED
	+	
1MILE		USE RIGHT LANE
1st flash		2nd flash

Situation 6:

- 2 Lane Freeway
- LEFT LANE CLOSED
- MAJOR ACCIDENT
- DEMAND GREATER THAN CAPACITY
- Lane closed is 1 mile ahead
- No exit between driver and closed lane

USE SAME SIGNS AS Situation 5

SELECTED EXAMPLES OF VMS MESSAGES

3) ACCIDENTS ON FREEWAY (Cont'd)

Situation 7:

- 2 Lane Freeway
- LEFT LANE CLOSED
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY
- Lane closed is 1 mile ahead
- There IS an exit between driver and closed lane

MAJOR ACCIDENT
1 MILE
USE RIGHT LANE

Situation 8:

- 2 Lane Freeway
- LEFT LANE CLOSED
- MAJOR ACCIDENT
- DEMAND GREATER THAN CAPACITY
- **Lane** closed is 1 mile ahead
- There IS an exit between driver and closed lane

MAJOR ACCIDENT
LEFT LANE CLOSED
1MILE

USE RIGHT LANE
OR
ALTERNATE ROUTE*

*OR
ACCESS
ROAD

1st flash

2nd flash

Situation 10:

- 2 Lane Freeway
- COMPLETE CLOSURE OF FREEWAY
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY AND GREATER THAN CAPACITY
- Lane closed is less than 1/2 mile ahead
- There IS an exit between driver and closed freeway

MAJOR ACCIDENT
FREEWAY CLOSED
AHEAD

ALL TRAFFIC
USE
NEXT EXIT

1st flash

2nd flash

Situation 11:

- 2 Lane Freeway
- COMPLETE CLOSURE OF FREEWAY
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY AND GREATER THAN CAPACITY
- Lane closed is less than 1 mile ahead
- No exit between driver and closed freeway

MAJOR ACCIDENT
FREEWAY CLOSED
1MILE

SELECTED EXAMPLES OF VMS MESSAGES (Cont' d)

1) ACCIDENTS ON FREEWAY (Cont'd).

Situation 12:

- 2 Lane Freeway
- **COMPLETE CLOSURE OF FREEWAY**
- **MAJOR ACCIDENT**
- **DEMAND LESS THAN CAPACITY AND GREATER THAN CAPACITY**
- Lane closed is 1 mile ahead
- There IS an exit between driver and closed freeway

MAJOR ACCIDENT
FREEWAY CLOSED +
1MILE

ALL TRAFFIC
USE
NEXT EXIT

1st flash

2nd flash

2) ACCIDENTS ON UPPER OR LOWER LEVEL OF FREEWAY

Situation 1:

- **ACCIDENT ON UPPER LEVEL** (not complete closure)
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY
- Upper/Lower split is less than 1/2 mile ahead

MAJOR ACCIDENT
ON UPPER LEVEL
USE CAUTION

Situation 2

- ACCIDENT ON UPPER LEVEL (not complete closure)
- MAJOR ACCIDENT
- DEMAND GREATER THAN CAPACITY
- Upper/Lower split is less than 1/2 mile ahead

MAJOR ACCIDENT
ON +
UPPER LEVEL

AVOID DELAY
USE
LOWER LEVEL

1st flash

2nd flash

Situations 3 & 4:

- **COMPLETE CLOSURE OF UPPER LEVEL**
- MAJOR ACCIDENT**
- **DEMAND LESS THAN CAPACITY AND GREATER THAN CAPACITY**
- Upper/Lower split is less than 1/2 mile ahead

MAJOR ACCIDENT
UPPER LEVEL CLOSED +

USE LOWER LEVEL
OR
ALTERNATE ROUTE

1st flash

2nd flash

SELECTED EXAMPLES OF VMS MESSAGES (Cont'd)

ACCIDENTS ON UPPER OR LOWER LEVEL OF FREEWAY (Cont'd)

Situation 5:

ACCIDENT ON UPPER LEVEL (not complete closure)
 JOR ACCIDENT
 DEMAND LESS THAN CAPACITY
 Upper/Lower split is 1 mile ahead

MAJOR ACCIDENT
 ON UPPER LEVEL
 1 MILE

1st flash

Situation 6:

ACCIDENT ON UPPER LEVEL (not complete closure)
 JOR ACCIDENT
 DEMAND GREATER THAN CAPACITY
 per/Lower split is 1 mile ahead

MAJOR ACCIDENT AVOID DELAY
 ON UPPER LEVEL + USE
 1 MILE LOWER LEVEL

1st flash

2nd flash

Situations 7 & 8:

COMPLETE CLOSURE OF UPPER LEVEL
 MAJOR ACCIDENT
 DEMAND LESS THAN CAPACITY & GREATER THAN CAPACITY
 per/Lower split 1 mile ahead

MAJOR ACCIDENT USE LOWER LEVEL
 UPPER LEVEL CLOSED + OR
 ALTERNATE ROUTE

1st flash

2nd flash

ACCIDENTS ON EXIT RAMP OR CONNECTOR

Situations 1 and 2:

COMPLETE CLOSURE OF EXIT
 JOR ACCIDENT
 DEMAND LESS THAN CAPACITY AND GREATER THAN CAPACITY
 it closed is less than 1/2 mile ahead

MAJOR ACCIDENT
 EXIT 568 CLOSED
 AHEAD

SELECTED EXAMPLES OF FMS MESSAGES (Cont'd)

3) ACCIDENTS ON EXIT RAMP OR CONNECTOR (Cont'd)

Situation 3:

- ONE LANE OF EXIT CLOSED
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY
- Lane closed is less than 1/2 mile ahead

MAJOR ACCIDENT
ON EXIT 568
USE CAUTION

Situation 4:

- ONE LANE OF EXIT CLOSED
- MAJOR ACCIDENT
- DEMAND GREATER THAN CAPACITY
- Lane closed is less than 1/2 mile ahead

MAJOR ACCIDENT		USE CAUTION
	+	OR
ON EXIT 568		ALTERNATE ROUTE
1st flash		2nd flash

Situations 5 & 6:

- COMPLETE CLOSURE OF EXIT
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY AND GREATER THAN CAPACITY
- Exit closed is less than 1 mile ahead

MAJOR ACCIDENT
EXIT 568 CLOSED
1MILE

Situation 7:

- ONE LANE OF EXIT CLOSED
- MAJOR ACCIDENT
- DEMAND LESS THAN CAPACITY
- Lane closed is 1 mile ahead

MAJOR ACCIDENT
ON EXIT 568
1 MILE

Situation 8:

- ONE LANE OF EXIT CLOSED
- MAJOR ACCIDENT
- DEMAND GREATER THAN CAPACITY
- Lane closed is 1 mile ahead

MAJOR ACCIDENT		USE CAUTION
ON EXIT 568	+	OR
1 MILE		ALTFRNATE ROUTE
1st flash		2nd flash

SCENAR IO NO.
 SECT-0035N- 158.492
 MAJOR
 DEMAND > CAPACITY
 3 THRU LANES EXISTING
 (1.H.35 N. VICINITY PINE ST.)



LEGEND



CHANGEABLE MESSAGE SIGN ON
 OVERHEAD SIGN BRIDGE



OVERHEAD SIGN BRIDGE

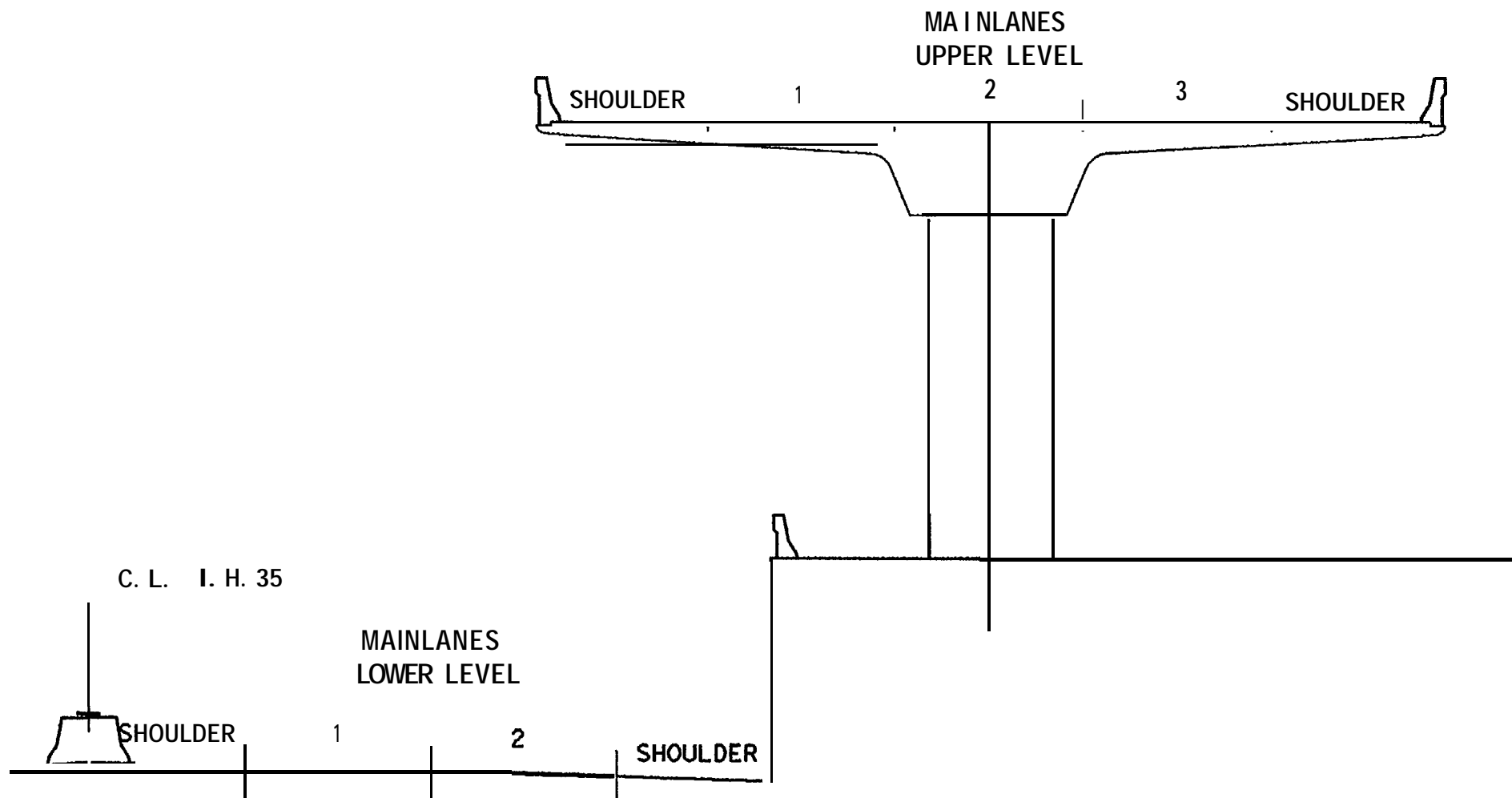
--- LANE CONTROL SIGNAL

--- DIRECTION OF TRAFFIC

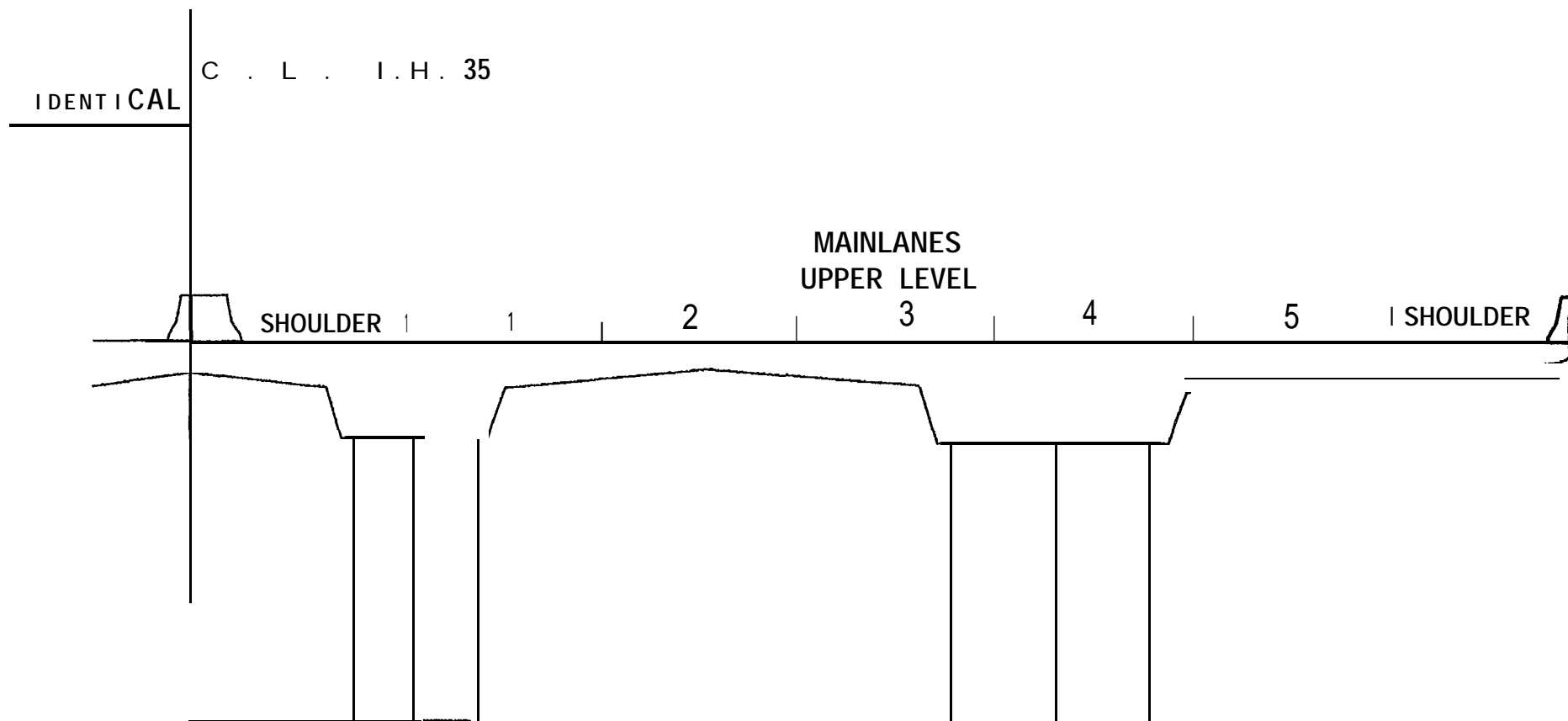


- - - C C T V

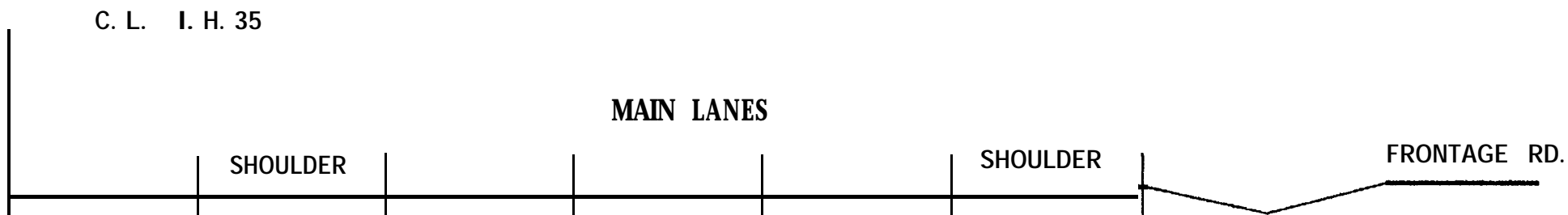
LAYOUTS NOT TO SCALE



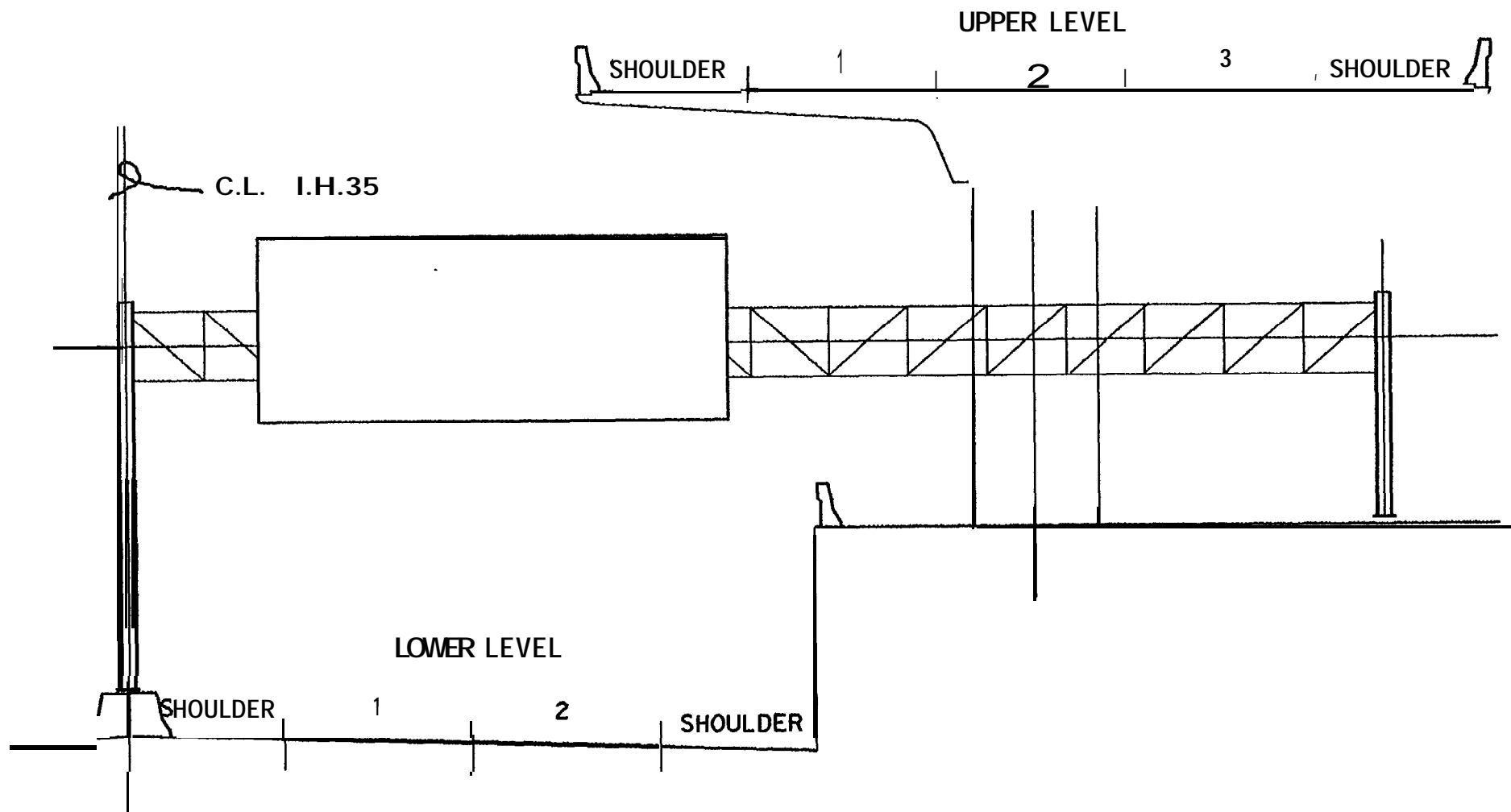
TYPICAL SECTION
I. H. 35 NORTHBOUND
SECTION A - A
(VAR I ABLE NO. OF LANES)



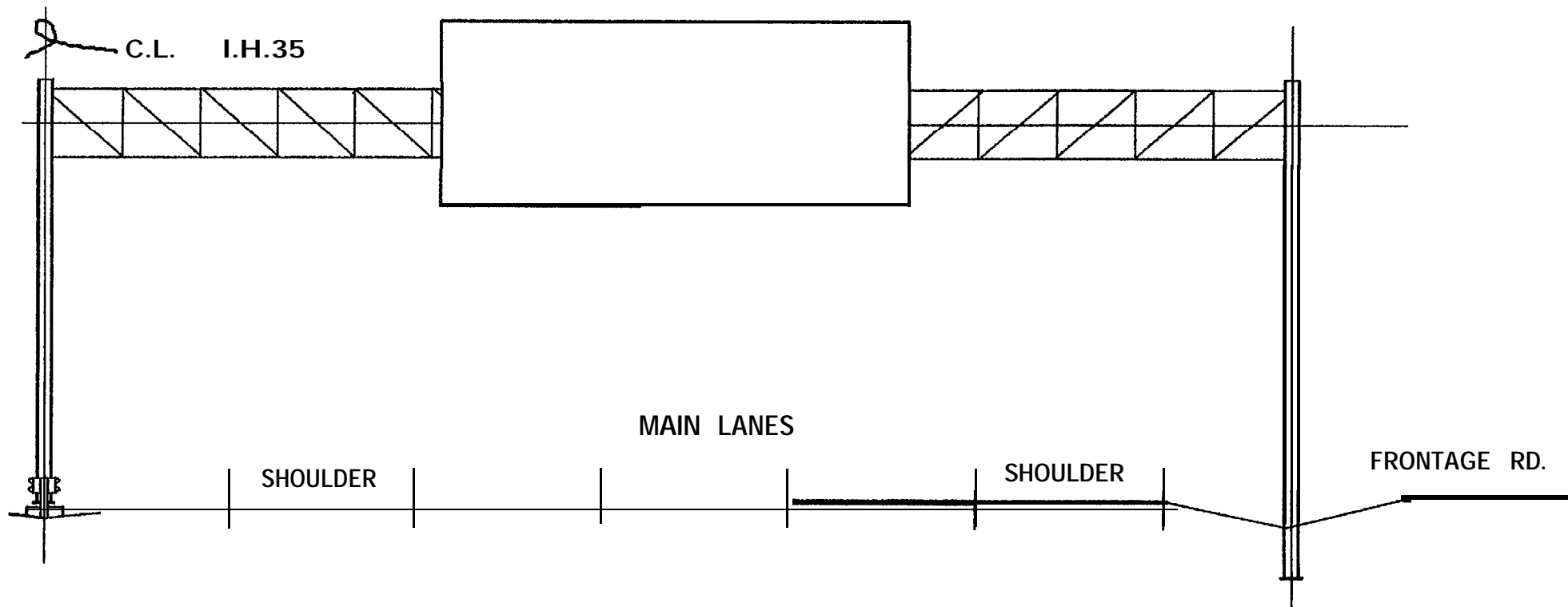
TYPICAL SECTION
I. H. 35 NORTHBOUND
SECTION B - B
(VARIABLE NO. OF LANES)



TYPICAL SECTION
I. H. 35 NORTHBOUND
SECTION C - C
(VARIABLE NO. OF LANES)



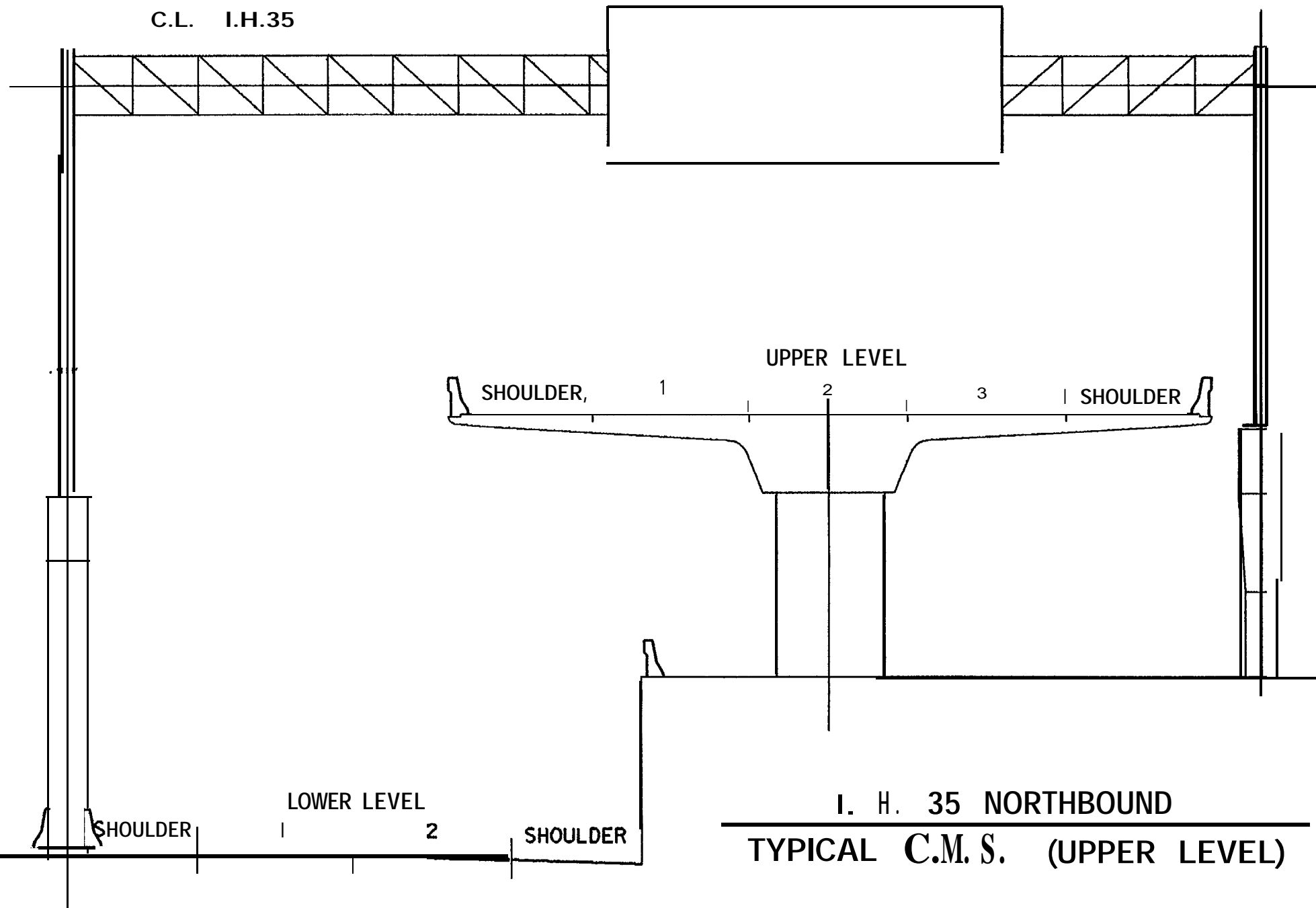
I. H, 35 NORTHBOUND
TYP | CAL C. M. S. (LOWER LEVEL)



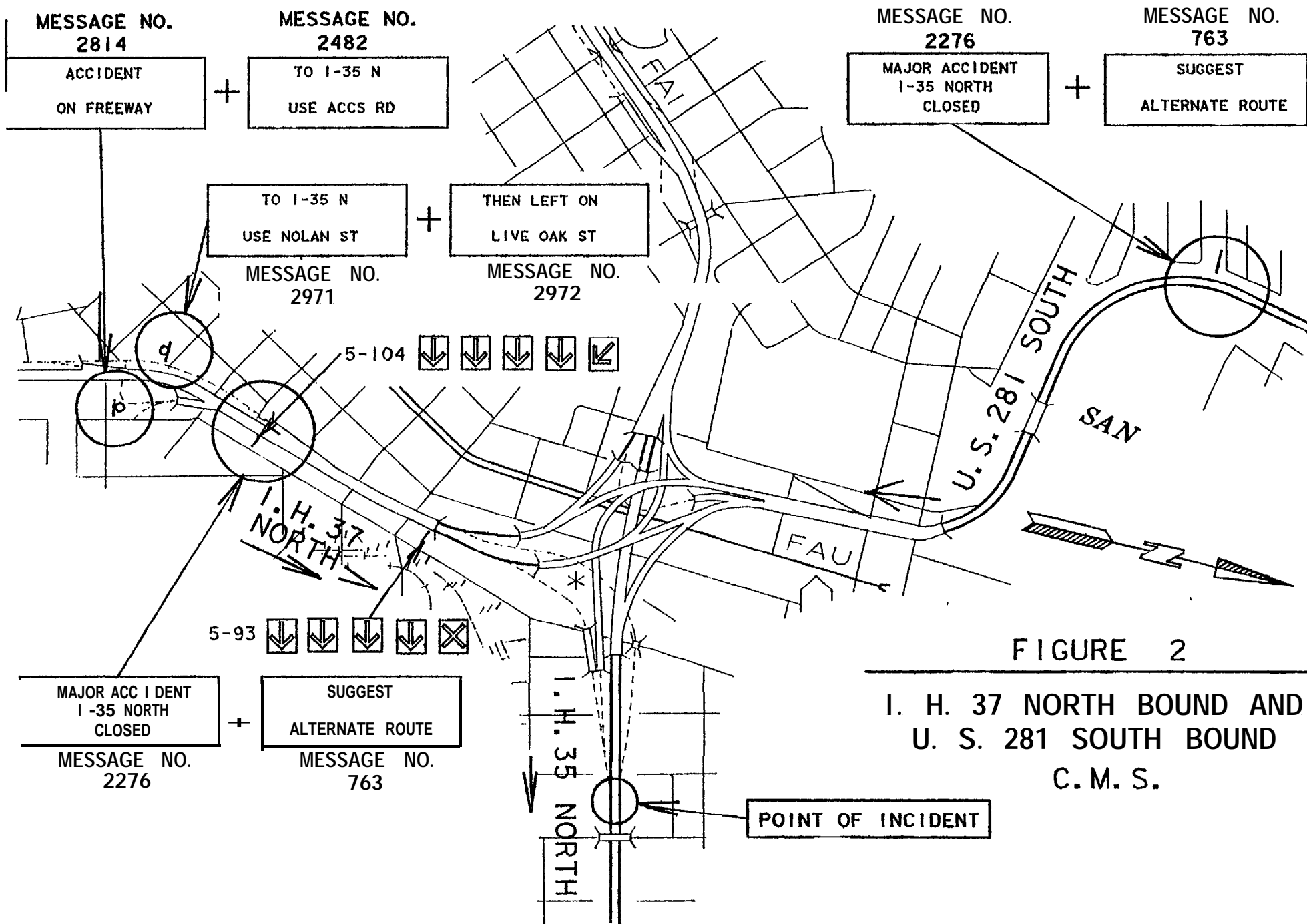
I.H. 35 NORTHBOUND

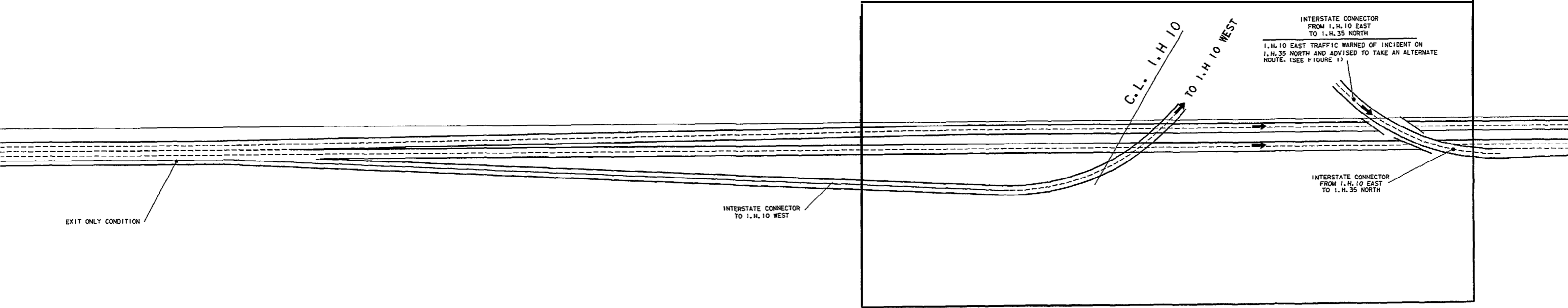
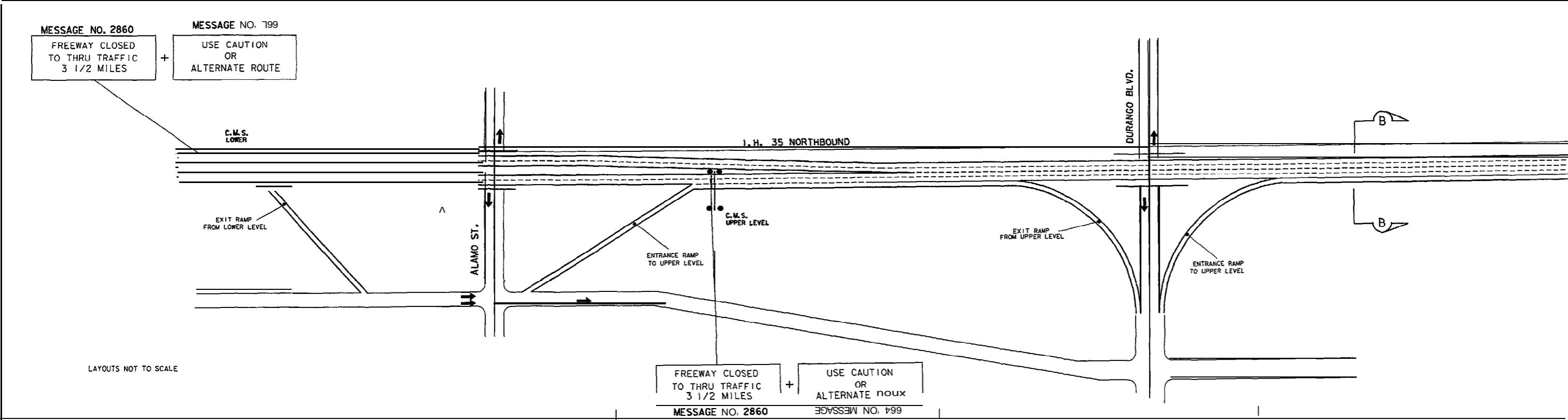
TYP | CAL C. M. S.

C.L. I.H.35

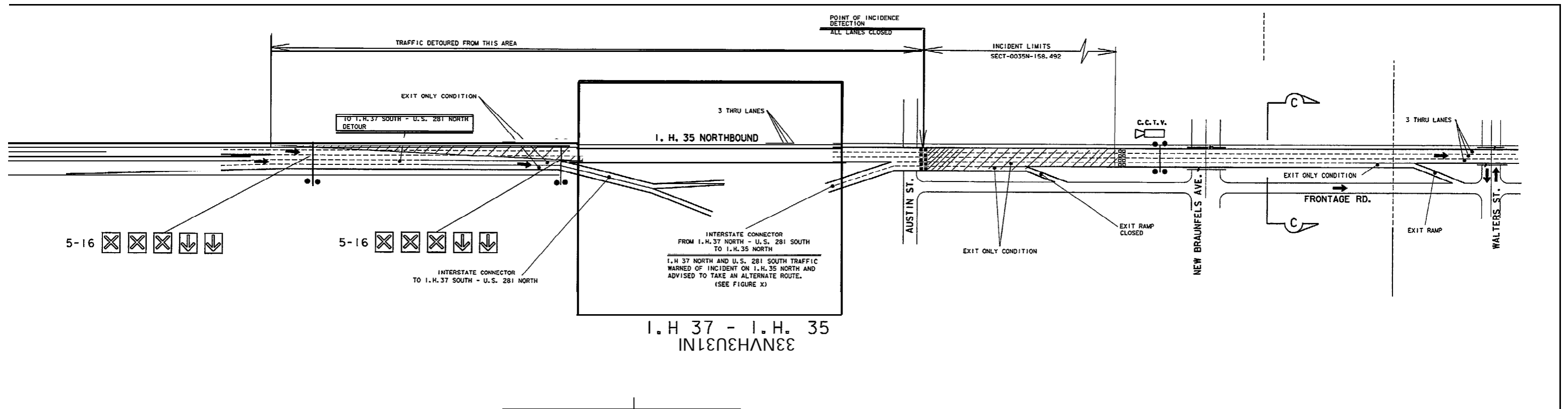
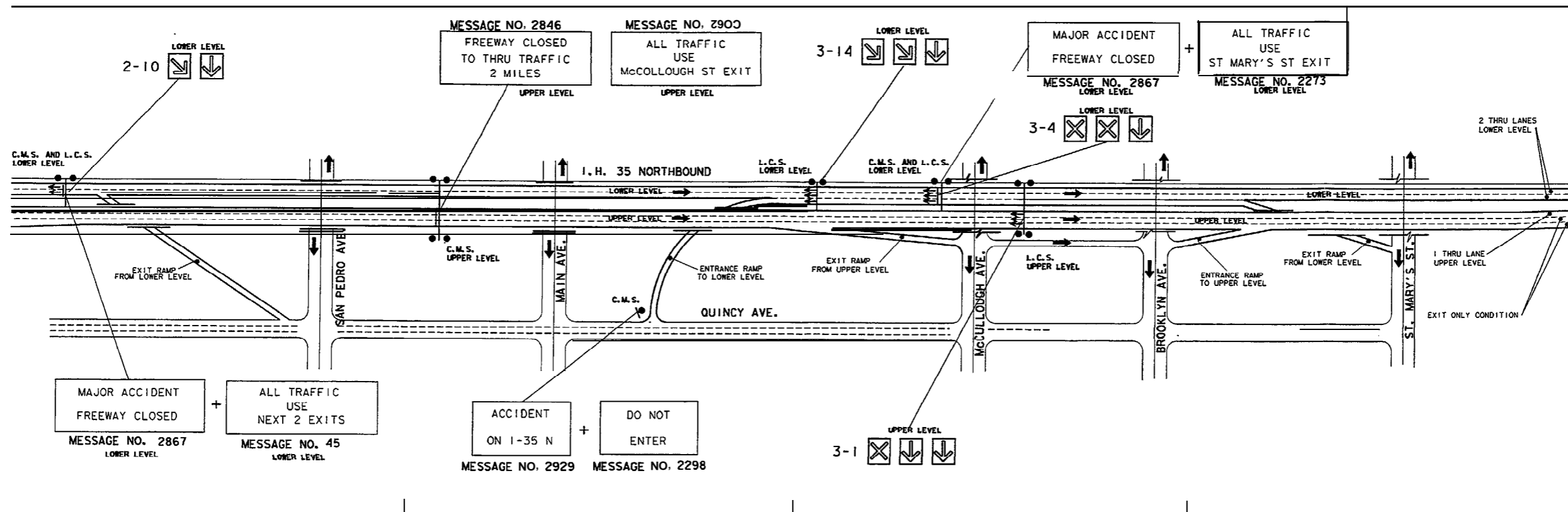


I. H. 35 NORTHBOUND
TYPICAL C.M. S. (UPPER LEVEL)



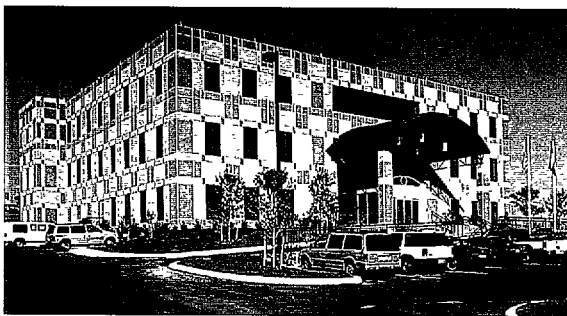


I.H. 10 - I.H. 35
INTERCHANGE





San Antonio, Texas



TransGuide Operations Center



San Antonio's Freeway System

Operational Test by:

Texas Department of Transportation, Allied Signal Technical Services Corp.,
Southwest Research Institute, Texas Transportation Institute

Report by:

Southwest Research Institute,
San Antonio, Texas
ID # lo-6315



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